

IN THE CLAIMS:

Please amend the claims as indicated below. All pending claims are reproduced below for the Examiner's convenience.

Q2 1. A method of fabricating substrates, the method comprising providing a substrate comprising a film of material characterized by a non-uniform surface, the non-uniform surface including a plurality of defects, at least some of the defects being of a size ranging from about 100 Angstroms and greater; and applying a combination of a deposition species for deposition of a deposition material and an etching species for etching an etchable material, the combination of the deposition species and the etching species contacting the non-uniform surface in a thermal setting to reduce a level of non-uniformity of the non-uniform surface by filling a portion of the defects to smooth the film of material, the film of material being substantially free from the defects and being characterized by a surface roughness of a predetermined value.

2. The method of claim 1 wherein said thermal setting increases a temperature of said non-uniform surface to about 1,000 Degrees Celsius and greater.

3. The method of claim 2 wherein said temperature increases is about 10 Degrees Celsius per second and greater.

4. The method of claim 2 wherein said temperature increases is about 20 Degrees Celsius per second and greater.

5. The method of claim 1 wherein said non-uniform surface comprises a plurality of particles therein, the particles comprising a hydrogen bearing species.

6. The method of claim 5 wherein said plurality of particles are derived from hydrogen gas during an implantation process.

7. The method of claim 1 wherein said predetermined value is less than about two nanometers root mean square.

8. The method of claim 1 wherein said predetermined value is less than about 1 nanometers root mean square.

9. The method of claim 1 wherein said predetermined value is less than about 0.1 nanometer root mean square.

92 10. The method of claim 1 wherein said etching species comprise a hydrogen bearing compound.

11. The method of claim 1 wherein said etching species comprise a halogen bearing compound.

12. The method of claim 1 wherein said etching species comprise a fluorine bearing compound.

13. The method of claim 12 wherein said fluorine bearing compound is selected from SF₆, CF₄, NF₃, and CCl₂F₂.

14. The method of claim 1 wherein said deposition species comprise a silane bearing gas.

15. The method of claim 1 wherein said deposition species comprise a silicon bearing species.

Sub B 16. The method of claim 1 wherein said deposition species comprise a species selected from SiH₄, SixClyHz, and SiClx.

17. The method of claim 1 wherein the non-uniform surface is a cleaved surface, the cleaved surface being made from a process selected from a controlled cleaving action, a Smart Cut™ process, or an ELTRAN™ process.

Q2 18. The method of claim 1 wherein the defects are called HF defects.

Please add the following new claims:

19. The method of claim 1, wherein the substrate is a silicon substrate having (100) crystal orientation.

Q3 20. A method of fabricating substrates, the method comprising providing a substrate comprising a film of material with a non-uniform surface, the non-uniform surface including a plurality of defects, at least some of the defects being 100 Angstroms or greater; and

applying simultaneously to the non-uniform surface a combination of a silicon-containing-deposition species for deposition of a deposition material and a halogen-containing-etching species for etching an etchable material in order to smooth the surface.

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etching
species
Si 21. The method of claim 20, wherein the combination of the deposition species and the etching species are contacting the non-uniform surface in a thermal setting of a temperature of about 1,000 degrees Celsius or greater.

Q2
my diff 22. A method of fabricating substrates, the method comprising providing a silicon substrate comprising a film of material with a non-uniform surface, the non-uniform surface including a plurality of defects, at least some of the defects being 100 Angstroms or greater, the silicon substrate having (100) crystal orientation, the non-uniform surface including particles derived from hydrogen gas during an implantation process; and

applying simultaneously to the non-uniform surface a combination of a silicon-containing-deposition species for deposition of a deposition material and a halogen-containing-etching species for etching an etchable material in order to smooth